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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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09/932,640

08/17/2001

Coleman D. Bagwell

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09/21/2005

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EXAMINER

NGO, NGUYEN HOANG

ART UNIT

PAPER NUMBER

2663

DATE MAILED: 09/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/932,640

Applicant(s)

BAGWELL ET AL.

Examiner

Nguyen Ngo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _____ MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 July 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. This communication is in response to the amendment of 7/7/2005. All changed made to the Specification, Drawings, and claims have been entered. Accordingly, Claims 1-13 are currently pending in the application.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 3, 6, 10, and 11 rejected under 35 U.S.C. 102(b) as being anticipated by O'Shea (US 6118797), hereinafter referred to as O'Shea.

Regarding claim 1, O'Shea discloses a signaling mechanism for a T-1 multipath digital time division multiplex telecommunication system, which transports signaling information exclusive of in-band robbed bit signaling (Abstract). O'Shea further discloses that the invention resides primarily in prescribed modular arrangements of conventional digital communication circuits (DSL communication unit) and associated attendant supervisory control circuitry that controls (managing) the operations of such components as seen in figure 1 as CPEs (DSL communication unit that is configured to provide access to plural remote digital communication devices (CPE) via a telecommunication network, a method of managing operational characteristics of said

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remote digital communication devices, figure 1 and col3 lines 8-13). O'Shea further disclose;

reserving a portion of one of the overall plurality of N available (DS0) channels of the M T-1 paths for exclusive transport of signaling information for each of N 'clear' DS-communication channels of all the M paths. Namely, that the N DS0 communication channels are comprised of the full bandwidth of each of the DS0 communication channels of M-1 DS1 paths, all but one of the DS0 channels of one of the DS1 paths, as well as a reduced bandwidth channel of the one DS0 channel from which the signaling portion has been reserved (col4 lines 5-15). As shown in figure 2, a respective one of the N DS1 frames, eight bits of a selected time DS0 slot, such as time slot TS1, are divided into a pair of four-bit nibbles N1 and N2, where N1 are employed as a sub-rate communication channel and N2 are employed to generate as a multi-nibble, sub-rate, signaling messaging channel (col4 lines 4-33). O'Shea further discloses that the T-1 multiplexer units 25 of the east and node shelf includes remote channel units that terminate analog pairs for (up to N= 384) end customer equipments (figure 1 and col3 lines 55-60) and that all 384 channels are serviced every 288 msec over the signaling channel (establishing contemporaneous management communication sessions with said plural remote digital communication devices over robbed in-band digital communication channels of respective TDM digital communication links to conduct TDM digital communications with said plural remote digital communication devices, col4 lines 50-52).

transmitting signaling bit pattern in a message comprising bits including prescribed control bits, and an address bit pattern representative of the identification of a signaling entity (col7 lines 31-25), where as seen in figure 2 the fourth nibble N2-4 of the sub-rate DS0 signaling channel message is used to convey the actual signaling data and the first through third nibble are used to provide up to 512 channel addresses, which is sufficient to accommodate the 384 (CPEs) DS1 channels (transporting user commands over said robbed in-band digital communication channels to respectively addressed ones of said remote devices during said contemporaneous management communication sessions, figure 2 and col4 lines 61-64).

Regarding claim 3, O'Shea discloses of a West station (DSL communication unit) that contains a control shelf (management terminal), which is the backplane of which supports T-1 multiplexer units, which terminate the west ends of the M T-1 paths (col3 lines 51-53) and comprises a control processor that controls the 'priority' and 'refresh' mode for the signaling channel message (establish contemporaneous management communication sessions by way of a user management terminal coupled to DSL communication unit, col5 lines 1-9).

Regarding claim 6, O'Shea discloses a signaling mechanism for a T-1 multipath digital time division multiplex telecommunication system, which transports signaling information exclusive of in-band robbed bit signaling (Abstract). O'Shea further discloses that the invention resides primarily in prescribed modular arrangements of

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conventional digital communication circuits (DSL communication unit) and associated attendant supervisory control circuitry that controls (managing) the operations of such components as seen in figure 1 as CPEs (a method remotely managing one operational parameters of plurality of remote digital communication devices (CPEs), figure 1 and col3 lines 8-13). O'Shea further disclose;

of a east station which contains a node shelf having a backplane that is configured to receive a set of T-1 multiplexer units terminating the east ends of the M T-1 paths, wherein the T-1 multiplexer units of the east end node shelf include remote channel units that terminate for (up to N=384) end customer units (interfacing TDM digital communication links with an integrated access device that is configured to provide access to plurality of remote digital communication devices, figure 1 and col3 lines 54-60).

of a West station that contains a control shelf (management terminal), which is the backplane of which supports T-1 multiplexer units, which terminate the west ends of the M T-1 paths (col3 lines 51-53) and comprises a control processor that controls the 'priority' and 'refresh' mode for the signaling channel message (user management terminal coupled to IAD that establishes management communication sessions,, col5 lines 1-9). O'Shea further discloses reserving a portion of one of the overall plurality of N available (DS0) channels of the M T-1 paths for exclusive transport of signaling information for each of N 'clear' DS- communication channels of all the M paths. Namely, that the N DS0 communication channels are comprised of the full bandwidth of each of the DS0 communication channels of M-1 DS1 paths, all but one of the DS0

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channels of one of the DS1 paths, as well as a reduced bandwidth channel of the one DS0 channel from which the signaling portion has been reserved (col4 lines 5-15). As shown in figure 2, a respective one of the N DS1 frames, eight bits of a selected time DS0 slot, such as time slot TS1, are divided into a pair of four-bit nibbles N1 and N2, where N1 are employed as a sub-rate communication channel and N2 are employed to generate as a multi-nibble, sub-rate, signaling messaging channel (col4 lines 4-33). O'Shea further that all 384 channels are serviced every 288 msec over the signaling channel (establishing contemporaneous management communication sessions with said plural remote digital communication devices over robbed in-band digital communication channels of respective TDM digital communication links, col4 lines 50-52).

transmitting signaling bit pattern in a message comprising bits including prescribed control bits, and an address bit pattern representative of the identification of a signaling entity (col7 lines 31-25), where as seen in figure 2 the fourth nibble N2-4 of the sub-rate DS0 signaling channel message is used to convey the actual signaling data and the first through third nibble are used to provide up to 512 channel addresses, which is sufficient to accommodate the 384 (CPEs) DS1 channels (transporting user commands over robbed in-band digital communication channels to respectively addressed ones of said remote devices during said contemporaneous management communication sessions, figure 2 and col4 lines 61-64).

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Regarding claim 10, O'Shea discloses a signaling mechanism for a T-1 multipath digital time division multiplex telecommunication system, which transports signaling information exclusive of in-band robbed bit signaling to CPE as seen in figure 1 (an arrangement for managing operational characteristics of plural remote digital communication devices (CPE) via a telecommunication network, Abstract). O'Shea further disclose;

that the invention resides primarily in prescribed modular arrangements of conventional digital communication circuits (DSL communication unit) and associated attendant supervisory control circuitry that controls (managing) the operations of such components as seen in figure 1 as CPEs, (figure 1 and col3 lines 8-13) and of a West station (DSL communication unit) that contains a control shelf (communication controller) which is the backplane of which supports T-1 multiplexer units, which terminate the west ends of the M T-1 paths (col3 lines 51-53) and comprises a control processor that controls the 'priority' and 'refresh' mode for the signaling channel message (a DSL communication unit that is configured to provide access to said plural remote digital communication devices via telecommunication network by way of TDM digital communication links, col5 lines 1-9).

that the control shelf (communication controller) comprises a control processor that controls the 'priority' and 'refresh' mode for the signaling channel message (communication controller for DSL communication unit, col5 lines 1-9) and reserves a portion of one of the overall plurality of N available (DS0) channels of the M T-1 paths for exclusive transport of signaling information for each of N 'clear' DS- communication

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channels of all the M paths. Namely, that the N DS0 communication channels are comprised of the full bandwidth of each of the DS0 communication channels of M-1 DS1 paths, all but one of the DS0 channels of one of the DS1 paths, as well as a reduced bandwidth channel of the one DS0 channel from which the signaling portion has been reserved (col4 lines 5-15). As shown in figure 2, a respective one of the N DS1 frames, eight bits of a selected time DS0 slot, such as time slot TS1, are divided into a pair of four-bit nibbles N1 and N2, where N1 are employed as a sub-rate communication channel and N2 are employed to generate as a multi-nibble, sub-rate, signaling messaging channel (col4 lines 4-33). O'Shea further discloses that all 384 channels are serviced every 288 msec over the signaling channel (cause DSL communication unit to establish contemporaneous management communication sessions with said plural remote digital communication devices over a robbed in-band digital communication channel of respective ones of said TDM digital communication links, col4 lines 50-52).

Regarding claim 11, O'Shea discloses transmitting signaling bit pattern in a message comprising bits including prescribed control bits, and an address bit pattern representative of the identification of a signaling entity (col7 lines 31-25), where as seen in figure 2 the fourth nibble N2-4 of the sub-rate DS0 signaling channel message is used to convey the actual signaling data and the first through third nibble are used to provide up to 512 channel addresses, which is sufficient to accommodate the 384 (CPEs) DS1 channels (transport user commands over a robbed in-band digital communication channels to respectively addressed ones of said remote devices during

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said contemporaneous management communication sessions, figure 2 and col4 lines 61-64).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

6. Claims 2, 4, 5, 7, 8, 9, 12 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over O'Shea (us 6118797) in view of Blum (US 5475867), hereinafter referred to as O'Shea and Blum.

Regarding claim 2, O'Shea fails to disclose the specific limitations of claim 2, more precisely the limitation of transporting responses to user commands. O'Shea however discloses that in response to new information associated with a change in operational state of the telecommunication device, a respective second information entry representative of the new operational state of the telecommunication device is

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transmitted in said reserved portion of the bandwidth (col8 lines 31-41), and thus provides the motivation to respond to the user command in order to efficiently determine the operational state of a remote device due to the user command.

Blum further discloses of a supplemental controller (DSL unit) that transmits a control message from a master controller to a supplemental remote terminal unit destination (SRTU) and that the SRTU performs the request command and responds with status information and then generates a response message, which is sent back to the master controller (col1 lines 51-62). Blum further states that the response message format includes a two-character master-remote terminal address field (transporting responses to said user commands, by said addressed ones of remote devices during said contemporaneous management communication sessions, col5 lines 35-41).

It would thus been obvious to a person skilled in the art to incorporate the supervisory control and data acquisition system, more specifically the response to a control command, disclosed by Blum into the signaling mechanism for a T-1 multipath digital time division multiplex telecommunication system containing remote CPE disclosed by O'Shea to effectively determine the state and operational characteristics of a remote CPE in response to a control signal sent over a reserved DS0 channel.

Regarding claim 4, O'Shea fails to disclose the specific limitations of claim 4, more precisely the limitation of in response to receipt of a message from said user

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management terminal, transporting a message over the in-band channel from DSL unit. O'Shea however discloses that in response to new information associated with a change in operational state of the telecommunication device, a respective second information entry representative of the new operational state of the telecommunication device is transmitted in said reserved portion of the bandwidth (col8 lines 31-41), and thus provides the motivation to respond to the user command in order to efficiently determine the operational state of a remote device due to the user command.

Blum further discloses of a supplemental controller (DSL unit) that transmits a control message from a master controller to a supplemental remote terminal unit destination (SRTU) and that the SRTU performs the request command and responds with status information and then generates a response message, which is sent back to the master controller (management terminal, col1 lines 51-62). Blum further states that the response message format includes a two-character master-remote terminal address field (receipt of a message from said user management terminal containing the identification of a respective remote digital communication device, col5 lines 35-41). Blum further discloses of initialization messages that are generated for transmission to the SRTUs (col3 lines 45-47) and that once the initial messages are processed (including receiving responses) command message may be identified and sent to the appropriate SRTU's (in response to receipt of a message (initial messages), transporting a message over a respective channel from said DSL communication unit

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(supplemental controller) containing said identification of said respective remote communication devices (remote terminal address), col4 lines 18-20).

It would thus been obvious to a person skilled in the art to incorporate the supervisory control and data acquisition system, more specifically the response to a control command, disclosed by Blum into the signaling mechanism for a T-1 multipath digital time division multiplex telecommunication system containing remote CPE disclosed by O'Shea to effectively determine the state and operational characteristics of a remote CPE in response to a control signal sent over a reserved DS0 channel.

Regarding claim 5, all the limitation of claim 5 is disclosed by O'Shea and Blum as discussed with claim 4.

Regarding claim 7, all the limitation of claim 7 is disclosed by O'Shea and Blum as discussed with claim 2.

Regarding claim 8, all the limitation of claim 8 is disclosed by O'Shea and Blum as discussed with claim 4.

Regarding claim 9, all the limitation of claim 9 is disclosed by O'Shea and Blum as discussed with claim 5.

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Regarding claim 12, all the limitation of claim 12 is disclosed by O'Shea and Blum as discussed with claim 8.

Regarding claim 13, O'Shea fails to disclose the specific limitations of claim 13, more precisely the limitation of forward to user management terminal responses to user commands. O'Shea however discloses that in response to new information associated with a change in operational state of the telecommunication device, a respective second information entry representative of the new operational state of the telecommunication device is transmitted in said reserved portion of the bandwidth (col8 lines 31-41), and thus provides the motivation to respond to the user command in order to efficiently determine the operational state of a remote device due to the user command.

Blum further discloses of a supplemental controller (DSL unit) that transmits a control message from a master controller (management terminal) to a supplemental remote terminal unit destination (SRTU, remote devices) and that the SRTU performs the request command and responds with status information and then generates a response message, which is sent back to the supplemental controller (DSL communication unit) which is then transmitted to the master controller (col1 lines 51-62). Blum further states that the response message format includes a two-character master-remote terminal address field (DSL communication unit to forward to said user management terminal responses to said user commands from said addressed ones of said remote devices, col5 lines 35-41).

It would thus been obvious to a person skilled in the art to incorporate the supervisory control and data acquisition system, more specifically the response to a control command, disclosed by Blum into the signaling mechanism for a T-1 multipath digital time division multiplex telecommunication system containing remote CPE disclosed by O'Shea to effectively determine the state and operational characteristics of a remote CPE in response to a control signal sent over a reserved DS0 channel.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a. Hsu et al. (US 2001/20021198), Method And Apparatus For Network Transmission Capacity Enhancement For The Telephone Circuit Switched Network.
- b. Allen, J.R. et al. (US 2004/0233909), ATM-Based Distributed Network Switching System.
- c. Chu et al. (US 6421375), Method And Apparatus For Transmitting Signal In A Data Communication System Having A Fully Digital Communication Channel.

Response to Arguments

8. Applicant's arguments, see Remarks page 10-11, filed Jun 27, 2005, with respect to the rejection(s) of claim(s) 1-13 under Liu (US 6,130,879) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of O'Shea (US 6118797).

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nguyen Ngo whose telephone number is (571) 272-8398. The examiner can normally be reached on Monday-Friday 7am - 3:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ricky Ngo can be reached on (571) 272-3139. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.


Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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PRIMARY EXAMINER

9/14/05